

# Characterizing Social Determinants of Health of the Population Receiving Pneumococcal Vaccine in a Nationwide Network in the United States

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BACKGROUND

- The Centers for Disease Control (CDC) recommends pneumococcal vaccination for older adults. [1]
- Uptake of routinely recommended vaccines among US adults remains low and socially vulnerable populations experience barriers, which may limit their access to vaccination. [2-4]
- Access to retail pharmacies may support community-based immunizations for socially vulnerable populations.

OBJECTIVE

- This study describes the social vulnerability characteristics of patients receiving pneumococcal vaccination at a national pharmacy network.

METHODS

- Pneumococcal vaccination records were identified from a national retail pharmacy immunization database from April 2021 to December 2024.
- CDC Social Vulnerability Index (SVI) [5] is a score ranging from 0 to 1. The SVI is comprised of 4 constituent themes (Socioeconomic Status, Household Characteristics, Racial & Ethnic Minority Status, Housing Type/Transportation) and 16 factors. Higher values correspond to higher vulnerability.
- SVI was linked to the immunization database by zip code of patient’s residence.
- Tests were summarized by quintiles of overall SVI and its 4 constituent themes and 16 factors. The first and fifth quintiles indicate least and most vulnerable communities, respectively.

RESULTS

- 2,327,917 patients 50 years and older received pneumococcal vaccinations at retail pharmacy locations from April 2021 through December 2024.
- Study population characterization: 19.2% of patients were 50-64 years old, 80.8% were 65 years or older, and 56.0% were female.
- The 4th and 5th quintiles together accounted for 64.7% of the pneumococcal vaccination population, demonstrating greater social vulnerability than would be expected in the general population.
- The strongest drivers of social vulnerability within the combined 4th and 5th quintiles were:
  - 63% Socioeconomic Status - Housing Cost Burden;
  - 75% Racial & Ethnic Minority Status;
  - Nearly 82% Limited English Language Proficiency; and
  - 85% Housing Type - Multi-Unit Structures.

Table 1. Quintiles of Social Vulnerability Indices

	SVI Quintiles				
	<0.2	≥0.2 - <0.4	≥0.4 - <0.6	≥0.6 - <0.8	≥0.8 - 1
SVI Category	2.5	11.7	21.1	26.2	38.5
Socioeconomic Status	14.2	19.4	18.2	19.6	28.5
Below 150% Poverty	24.3	25	20	18.1	12.6
Unemployed	2	19.7	32.9	30.4	14.9
Housing Cost Burden	3.7	12.9	19.8	27.8	35.7
No High School Diploma	18.2	24.3	20.2	18.1	19.2
No Health Insurance	14.1	21.9	22	23.8	18.3
Household Characteristics	2.7	10.9	27.1	32.6	26.7
Ages 65 & Older	25	28.1	22.2	15.7	8.9
Ages 17 & Younger	10.5	22.1	26.7	24.2	16.4
Civilian with a Disability	29.8	31.5	20.3	13.5	4.9
Single-Parent Households	1.3	12.7	25.8	32.4	27.7
English Language Proficiency	3.7	0	14.6	31.4	50.2
Racial & Ethnic Minority Status	1.5	6.7	16.9	30.1	44.8
Housing Type/Transportation	1.5	5.5	19.7	32.4	41
Multi-Unit Structures	4.4	0	10.3	27.4	57.9
Mobile Homes	35.6	33	17.1	8.8	5.6
Crowding	3.4	12.4	25.6	25.9	32.6
No Vehicle	3.1	20.2	26.2	26.7	23.8
Group Quarters	7.5	0	33.5	37.5	21.5

CONCLUSIONS

- A high percentage of the population receiving pneumococcal vaccination at a national retail pharmacy network came from vulnerable communities.
- Community-based immunizations may help address the structural and social barriers to healthcare access that are associated with known inequities in these vulnerable populations.

REFERENCES

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